REPORT

ON THE

Government Horticultural Gardens,

LUCKNOW,

FOR THE

AR ENDING 31ST MARCH 1910.

ALLAHABAD:
PRINTED BY F. LUKER, SUPDT., GOVERNMENT PRESS, UNITED PROVINCES.
1910.

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Hemendra Kothari

on 24 February, 2020

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No. $\frac{2079}{\text{VA-321A.}}$, of 1910.

From

W. H. MORELAND, Esq., C.I.E., I.C.S.,
Director of Land Records and Agriculture,
United Provinces,

To

The SECRETARY to GOVERNMENT,
United Provinces, Industries Department,
Naini Tal.

Dated Lucknow, the 11th of June 1910.

Sir,

I have the honour to submit for orders of Government the report on the Government horticultural gardens at Lucknow for the year ending 31st March 1910.

2. Satisfactory progress is being made in reducing the retail distribution of seed from the gardens, and now that agents have been appointed for retail sale it may be hoped that the staff of the gardens will be able to devote more time to those branches of horticultural work for which the need is most pressing.

The measures taken by the Superintendent to restore the Lucknow strawberry cultivation, which has recently suffered so much, indicate one direction where the gardens can be of great service to cultivators and to the public.

3. The gardens have made a satisfactory contribution to the progress of horticultural education during the year, and the remarks in paragraph 10 of the report show that the position of the trained gardener is now improving in his own eyes and in those of his employers.

4. The usual acknowledgements are due to the donors named in Appendix B.

5. I am much indebted to Mr. Davies, the Superintendent, for his efforts to increase the efficiency of the gardens as a centre of horticultural development and education.

I have the honour to be,
Sir,
Your most obedient servant,
W. H. MORELAND,
Director.

Maximum limit of report—seven pages.

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REPORT of the GOVERNMENT HORTICULTURAL GARDENS, LUCKNOW, for the year ending 31st March 1910.

I.—INTRODUCTORY.

1. *Charge of the gardens.*—I held charge of the gardens throughout the year.

2. *Important administrative events.*—In last year's report it was mentioned that Government had decided that the gardens should discontinue the retail sale of imported flower and vegetable seed and that this business be made over to private enterprise. This order was carried out with only a few exceptions. In cases where there was a demand for seed already in our hands it was supplied, and provision was made to meet the needs of local Indian market gardeners for reliable seed of cauli flower, turnip, carrot and cabbage.

It may be necessary again this year to arrange for a sufficient quantity of seed of the above mentioned vegetables to supply to these cultivators. Their livelihood for nearly half the year depends on the success of these crops and they have long depended on the Government gardens for their seed, knowing it to be the best obtainable, and would not with comfortable minde go elsewhere for it at present. Owing to timely notice having been given to the public regarding the discontinuance of the sale of imported flower and vegetable seeds no inconvenience was caused by the change.

During the coming year it has been arranged to dispose of all the acclimatized flower and vegetable seed raised in the gardens through retail agents, and notices to this effect will be sent to the principal newpapers in India for the information of the public.

3. *State of the gardens.*—A number of improvements were made during the year calculated to increase the usefulness of the gardens and add to their beauty.

Much attention was devoted to improving the condition of the fruit trees used for propagating purposes and to raising a larger stock of young trees for distribution. The mango stands first in favour among purchasers and a large number of good healthy trees were disposed of and as a sign of the improved condition of agriculturists the better and more expensive kind were selected in preference to the cheaper varieties. My advice to cultivators is to plant only the best and most profitable kinds, for the simple reasons that they cost no more to grow than the commoner mangoes and take up less room on the land.

The rose garden was extended in order to meet the increased demand for cut flowers in the cold season. Only the best free flowering varieties were planted. A considerable addition was made in the number of kinds grown in the gardens. Many of these were acquired from other gardens in India while the newer varieties were purchased from Europe.

A special effort was made towards improving acclimatised flowers, and with this object in view seeds were purchased in England of many of the best strains of sweet peas, dianthus, delphinium, candytuft, nasturtium, linaria, mignonette, etc.

The results have been most satisfactory except in the case of sweet peas where only a small quantity of seed was gathered owing to the plants flowering too late in the season to allow of the pods maturing. To ensure a standard of excellence in flowers it is necessary to be constantly at work eliminating the weak plants and selecting only those which are true to description in the matter of colour, size of blooms and habit of growth. Some plants deteriorate in the second or third year while others remain constant for years and become more vigorous and floriferous under the climatic conditions existing in these provinces.

Among vegetables, edible peas were experimented with and the results were distinctly encouraging. There is no doubt that this vegetable can be grown in Lucknow with the same ease and with as much success as it is in Europe. A quantity of most excellent seed was gathered, some of which will be kept for sowing and the rest distributed.

The trees in the exotic garden suffered badly from the effects of floods during the rains. Owing to the river being abnormally high and therefore unable to

receive the surface water from the land on the gardens side of its bank, a large lake formed covering the whole of the exotic plantation and part of the experimental flower garden. The water remained on the land for considerably over a week and many of the smaller trees were half submerged. After the water subsided the land remained in a water-logged condition for weeks and caused the death of a number of trees. A few of the stronger specimens were in no way affected by the flood and subsequently made vigorous growthe. The casualties from the flood will, as far as possible, be made good during the next planting season.

Arrangements have been made for the fencing of the north side of the garden, the fence running parallel with the Butler road. Owing to the absence of some such protection cattle have at times caused much damage to the gardens.

The glass house erected towards the end of last year has been of valuable service to the gardens. Plants of a tender nature which require protection in the early stages of their growth and during the cold season have been kept in perfect health. The house is also useful for propagating various classes of plants which only do moderately in an ordinary chick house.

4. *Character of the season* :—The rainfall for the year as recorded by the local meteorological office was 46·83 inches. This amount was in considerable excess over the past few years. The rain was well distributed and vegetation in general benefited considerably. The moisture in the soil greatly assisted the germination of seed sown for the cold season corps. No damage has to be reported from frosts. The winter season was in every way favourable to gardening operations and to this is due the present flourishing condition of plants in pots and in the ground.

II.—ACCLIMATISATION AND OTHER EXPERIMENTAL WORK.

5. *Fruit and food producing trees.*—The work of experimenting and acclimatising was continued during the year under report with good results.

Pine-apples.—The plants in the plot set apart for the cultivation of the pine-apple yielded a few fruits of excellent flavour. A considerable number of plants are at the time of writing producing fruits which show much promise. It may be mentioned that the pine-apple needs the protection of trees for shade and the mango is best suited for this purpose.

Pears.—Time has been needed to produce any well marked effect on the pear trees experimented on by me in previous years. The trees have, during the past year formed a plentiful supply of fruiting spurs, and by flowering profusely demonstrated in a practical manner that root pruning has produced the effect that was anticipated when the operation was performed. For some years the trees had shown no signs of flowering though at the time in good health and making an abundance of wood. The root pruning gave the trees the necessary check and forced their energies in a reproductive direction. Whether the pear will ever become a profitable fruit for cultivators to grow in the district of Lucknow is not certain. The varieties grown in the gardens are used only for cooking and preserves. Similar fruit is imported into Lucknow from Bareilly and elsewhere and finds a ready sale.

Arabian dates.—These trees, concerning which so much has been written in previous reports, fruited sparingly, heavy showers of rain in the month of April when the trees were flowering interfered with fertilization. The fruits that set were spoiled at the time of maturing by heavy rains at the latter end of June.

Strawberries.—The gardens around Lucknow have the reputation of being able to produce strawberries of much excellence both in size and flavour. Owing to the dry seasons of 1907-8 cultivators lost nearly the whole of their stock of plants. No serious attempt appears to have been made to replenish the stock lost with the result that only a small quantity of fruit has been offered for sale during the last two seasons. Strawberries are a profitable fruit to grow and the demand for it locally has always been greater than the supply. With the object of encouraging the cultivators to again take up the growth of the plant, the gardens procured a considerable number of offsets from other centres among them being several hundreds of the variety named Royal Sovereign. These offsets have reproduced themselves in quantity and provided that they can be kept in good health until next cold season. I propose to distribute them on easy terms to well-known cultivators. I have also made arrangements to procure a large stock of young plants from the Naini Tal district to supplement those we hope to have for disposal.

6. *Other trees and plants of economic value.*—In the year 1907, the Queensland Nut (Macadamia ternifolia) fruited for the first time in the gardens. In Australia the nut is held in esteem owing to its agreeable flavour which resembles the Brazilnut (Bertholletia excelsa). A number of young trees were raised from the seeds, some of which are now large enough for transplanting.

The parent tree has flowered freely each year since 1907, but has not again set fruit.

III.—FINANCIAL RESULTS.

7. *Receipts.*—The actual receipts of the gardens were less than those of last year. The cause was, however, due not to a falling off in the sale of garden produce but entirely owing to the sale of imported seed having been discontinued. It was anticipated by me in my report for last year that there would be a decrease, and that it was not greater than the figures show may be considered a cause for satisfaction. A revenue of about Rs. 3,500 was usually received from the sale of imported seeds.

As a set off to the loss under this head a larger income accrued from the sale of acclimatised flower seeds and fruit trees. Under the new arrangement for disposing of garden grown seed through agents a further loss of revenue may be expected though not to any great extent. During the past year, just over 82,000 plants and cuttings were distributed from the gardens. Of this number 6,681 were fruit trees, chiefly mangoes, oranges, lemons, jack-fruit and guavas, 33,436 ornamental trees and shrubs and 17,980 bulbous and tuberous plants. Roses were, as usual, in good demand and a large number left the gardens. At present we have a fine stock of young mango and other fruit trees which will be ready for disposal when the planting season arrives. **See appendix C.**

Seeds.—The number of packets of seeds sent out during the year was 9,661 weighing a little over 1,715 lbs. against 10,553 packets and 2,220 lbs. in 1908-9. These results compare very favourably when we take into consideration that only a limited quantity of imported seed was sold, the bulk representing acclimatised flower seed.

Agava sisalana.—The gardens were able to meet all demands for this Agava 22,000 young plants being distributed. We have a considerable number of healthy plants for disposal, also a large stock of bulbils.

The plants in the newly planted nursery are making good progress and in course of time should prove a valuable asset to the gardens.

The receipts of the gardens were estimated at Rs. 20,000, while the actual receipts were Rs. 14,816. **See appendix A.**

The difference is accounted for in the reasons previously noted. It is not expected that next year's receipts will rise above the figures for the year under report.

Plants, seeds, and cut flowers were distributed free and in exchange to the value of Rs. 6,500. The actual receipts and book receipts combined amounted to Rs. 21,316 against Rs. 22,622 for last year.

8. *Expenditure.*—The estimated expenditure of the gardens was Rs. 29,350 and the actual expenditure Rs. 27,369. **See appendix A.**

From the balance of Rs. 1,981, Rs. 1,260 and Rs. 60 were transferred to Director of Land Records and Agriculture office and Kumaun Botanical Gardens under G. O. Nos. 187/XV—507 and 1952/XII—398, dated the 26th October and 8th November 1909 respectively.

9. *Surplus or deficit.*—Compared with the expenditure the total receipts show a deficit of Rs. 6,053. If only cash receipts paid into the treasury are taken into account book credit excluded the deficit amounts to Rs. 12,553.

IV.—MISCELLANEOUS.

10. *Training of gardeners.*—Overseer class : Mr. Johnson and Mr. Briant, two students of the overseer class, joined the gardens at the beginning of 1910. They had previously been under training at Saharanpur for two years and having passed the necessary test were sent to these gardens for further training.

More than 50 applications were received for gardeners during the year, of which about one-third were met. The mali has at last recognised the fact that he has everything to gain by registering his name with the gardens for a better

or more suitable post. By doing so his whereabouts are known to the office and he keeps in touch with the garden in which in the majority of cases he received his early training. The trained mali is in a much better position than he was 10 or 15 years ago. He has learnt to have a certain respect for his profession and himself, and has gained the trust of his employers. So long as this state of things exists a mali need have no fear of earning good wages and providing himself with all the necessaries of life.

The students of the chaudhry class are making excellent progress. The five young men now under training have worked steadily and applied themselves in a thorough fashion to grasp all the details connected with guardening. All have been taught to read and write plant names both in English and the Vernacular as well as to understand the meaning of the descriptions of plants as found in the garden catalogues. The training they are receiving should enable them to take up positions full of confidence in their own abilities and with a knowledge that they are worth the remuneration given for their services. The number of students in the class would have been larger had it not been for the fact that some of the applicants failed to respond to the notice fixing the time for admission. Others after making enquiries concerning the nature of the work they would be required to perform, withdrew their names.

11. *Arboriculture.*—A class for training young men in arboriculture work was held during the past year. The class covered a period of five months, from April to September. The fourteen students received a thorough grounding in the art of raising and planting and the supervision of roads side trees and plantations. An examination held by me at the end of the course showed that the young men had profited by what they had been taught and all succeeded in satisfying me that they were capable of being entrusted with the care of road-side trees.

About 2,500 young trees were distributed from the nursery for road-side planting during the year. The present stock of trees numbers well over 25,000, more than half of which will be available for planting next rains.

The allotment for maintenance of the nursery was Rs. 2,219 from which Rs. 1,240 were spent.

Subscribers.—The nine subscribers mentioned in last year's report still remain on the books and were supplied with seeds and plants according to the rules of the garden.

12. *Flower show.*—The annual horticultural show of flowers, fruit and vegetables was held in the Wingfield Park on the 26th February 1910. Owing to a rather backward season the exhibits in the pot section were not so numerous as in some previous years, but it was readily admitted that the standard of the plants shown was in no way wanting. Some excellent specimens of petunias, carnations, stocks, geraniums and asters were exhibited. Note was also made of the increase of new varieties of annuals staged, a sign that a greater personal interest is being taken in horticulture by private growers. Roses made a very fine display and were not only of the best form but represented the latest varieties of this lovely flower. Vegetables were good and clean and left no doubt that the mali thoroughly understands their cultivation. Fruit was not shown in any quantity nor was it deserving of any special mention.

The show was well supported by the public. A larger number of people visited the exhibition than in any previous year.

The receipts amounted to Rs. 894, and the expenditure was Rs. 882, leaving a balance of Rs. 71.

Owing to want of funds the flower show committee was unable to hold a chrysanthemum show, but in its place an exhibition was privately arranged, which from a horticultural point of view was a complete success.

13. *Conclusion.*—Willing assistance was given by the office staff during year in the discharge of work connected with the supply of plants and seeds to the public. Now that the retail sale of seeds is being made over to agents the staff will be relieved of a considerable amount of work and the time thus saved should enable the office to be conducted with greater efficiency.

H. J. DAVIES,

Superintendent,

Government Horticultural Gardens, Lucknow.

APPENDIX A.—*(See report paragraphs 7 and 8.)*

*Statement showing the receipts and expenditure of the Government Horticultural Gardens, Lucknow, for the year ending 31st March 191^*

Heads.	Actuals of 1908-9.	Budget for 1909-10.	Actuals of 1909-10.
1	2	3	4
	Rs.	Rs.	Rs.
Receipts	16,402	20,000	14,816
CHARGES.			
Superintendent	3,003	5,048	2,900
Establishment	8,068	9,529	6,574
Allowances	579	300	10
SUPPLIES AND SERVICES.			
Purchase of seeds and plants	4,449	4,500	3,425
Purchase of live stock	...	600	...
Feed of live stock	3,117	2,300	3,249
Purchase of manure	558	500	1,005
Rent of land	24	24	...
Maintenance of premises	3,448	1,000	444
Cooly labour	1,912	2,500	4,135
Contingencies	3,769	3,049	5,627
Total ...	28,927	29,350	27,369

APPENDIX B.

List of contributors to the garden during the year ending 31*st March* 1910.

Name of contributors.	Name and description of articles supplied.
The Superintendent, Royal Botanical Gardens, Sibpur, Calcutta.	1 lb. Swietenia Mahogani seeds. 1 packet Manihot Glaziovii „ 1 „ Areca Madagascariensis seeds. 1 „ Corypha elata „ 1 „ „ Umbraculifera „ 2 „ Aleurites triloba „
The Superintendent, Government Gardens, Fyzabad.	16 Lily bulbs.
The Superintendent, A. H. S. Gardens, Rangoon.	1 packet Palm seeds.
President, Imperial Forest Research Institute, Dehra Dun.	6 plants Ribbon Grass.
Secretary, Agri.-Horticultural Society of India.	2 packets Cassia sp. seeds.
Department of Agriculture, North Caroline, U. S. A.	packet 1 Cucumis Melo (casaba) seeds.
L. G. Evans, Esq., Lucknow ...	2 plants Bougainvillea lateritia.
A. H. Pirie, Esq., Lucknow ...	1 packet Arctotis seeds.
G. A. Gammie, Esq., Poona ...	6 „ Bamboo and other seeds.
Major Ronaldson, H. L. I., Lucknow ...	2 „ flower „
M. A. Robertson, Esq., Parc de Tropiques. France.	2 „ „ „
Messrs. Sutton and Sons, Reading England	36 „ „ „
Miss Keatinge, Lucknow	45 plants Chrysanthemums.
B. T. N. Bhau, Dholpur	1 packet Bœhmeria nivea (Ramie) seeds.
Manager, Purtabpore Company, Limited...	5 „ Fodder crop „

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Hemendra Kothari

on 24 February, 2020

APPENDIX C.—*(See report, paragraph 7.)*

Showing the amount of plants and seeds distributed from the garden during the year ending 31st March 1910.

Name of department &c., supplied.	Plants.										Seeds.					Total.	
	Fruits.			Ornamental and timber trees.		Ornamental plants and shrubs.		Bulbous and tubers.	Agave.	Total.	Vegetables.	Flowers.	Fruits.	Trees and shrubs.	Miscellaneous.	Number of packets.	Weight.
	Plants	Cuttings.	Strawberries.	Plants.	Cuttings	Plants.	Cuttings										
																	lbs. ozs.
General public ...	5,529	112	400	12,410	...	18,204	2,030	17,130	21,200	77,015	2,035	6,038	..	120	38	8,231	1,451 14
Government and public gardens in India.	380	...	...	1,360	...	1,162	...	850	800	4,552	550	600	...	18	25	1,193	190 10
Government and public gardens in other countries.	...	...	...	...	...	...	...	...	...	...	15	...	...	...	...	15	20 2
Jails	200	...	...	...	...	300	...	...	...	500	72	138	...	12	...	222	52 8
Total ...	6,109	112	400	13,770	...	19,666	2,030	17,980	22,000	82,067	2,672	6,776	...	150	63	9,661	1,715 2